

18BP044 PHARMACOLOGY – I

Hours Per Week :

L	T	P	CP	CL
3	1	4	2	4

Total Hours :

L	T	P	WA/RA	SSH/HS	CS	SA	S	BS
45	1	60						

SCOPE:

The main purpose of the subject is to understand what drugs do to the living organisms and how their effects can be applied to therapeutics. The subject covers the information about the drugs like, mechanism of action, physiological and biochemical effects (pharmacodynamics) as well as absorption, distribution, metabolism and excretion (pharmacokinetics) along with the adverse effects, clinical uses, interactions, doses, contraindications and routes of administration of different classes of drugs.

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes	POs	PSOs
1	Understand the pharmacological actions of different categories of drugs	1,4	1,2
2	Explain the mechanism of drug action at organ system / sub cellular/macromolecular levels	1,4	1,2
3	Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.	1,4	1,2
4	Observe the effect of drugs on animals by simulated experiments	1,4	1,2
5	Appreciate correlation of pharmacology with other bio medical sciences	4	2

UNIT - I**08HOURS****GENERAL PHARMACOLOGY**

a. Introduction to Pharmacology: Definition, historical landmarks and scope of pharmacology, nature and source of drugs, essential drugs concept and routes of drug administration, Agonists, antagonists(competitive and non competitive), spare receptors, addiction, tolerance, dependence, tachyphylaxis, idiosyncrasy, allergy.

b. Pharmacokinetics: Membrane transport, absorption, distribution, metabolism and excretion of drugs .Enzyme induction, enzyme inhibition, kinetics of elimination.

UNIT - II**12HOURS****GENERAL PHARMACOLOGY**

a. Pharmacodynamic: Principles and mechanisms of drug action. Receptor theories and classification of receptors, regulation of receptors. drug receptors interactions signal transduction mechanisms, G-protein–coupled receptors, ion channel receptor, trans membrane enzyme linked receptors, trans membrane JAK-STAT binding receptor and receptors that regulate transcription factors, dose response relationship, therapeutic index, combined effects of drugs and factors modifying drug action.

b. Adverse drug reactions.

c. Drug interactions (pharmacokinetic and pharmacodynamic).

d. Drug discovery and clinical evaluation of new drugs -Drug discovery phase, preclinical evaluation phase, clinical trial phase, phases of clinical trials and pharmacovigilance.

UNIT - III**10HOURS****PHARMACOLOGY OF DRUGS ACTING ON PERIPHERAL NERVOUS SYSTEM**

a. Organization and function of ANS.

b. Neuro humoral transmission, co-transmission and classification of neurotransmitters.

c. Para sympathomimetics, Para sympatholytics, Sympathomimetic, sympatholytics.

d. Neuromuscular blocking agents and skeletal muscle relaxants (peripheral).

e. Local anesthetic agents.

f. Drugs used in myasthenia gravis and glaucoma

UNIT - IV**08HOURS****PHARMACOLOGY OF DRUGS ACTING ON CENTRAL NERVOUS SYSTEM**

a. Neuro humoral transmission in the C.N.S.special emphasis on importance of various neurotransmitters like with GABA, Glutamate, Glycine, serotonin, dopamine.

b. General anesthetics and pre-anesthetics.

c. Sedatives, hypnotics and centrally acting muscle relaxants.

d. Anti-epileptics

e. Alcohols and disulfiram

UNIT - V**07HOURS****Pharmacology of drugs acting on central nervous system**

a. Psychopharmacological agents: Antipsychotics, antidepressants, anti-anxiety agents, anti-manics and hallucinogens.

b. Drugs used in Parkinson's disease and Alzheimer's disease.

c. CNS stimulants and nootropics.

d. Opioid analgesics and antagonists

e. Drug addiction, drug abuse, tolerance and dependence.

